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Subject: Ventron meeting follow-up

Hi Gwen,

Just to let you know EPA has been following up on several of the issues discussed with you at our Dec. 18 meeting in Edison. Below is a summary of where we stand. It includes some feedback on specifics of the additional low-flow GW and subsurface soil sampling we agreed to.

We agreed to follow-up with a conference call. I'm expecting some materials from you like plan views of the clay and meadow mat layers. As I recall you were also looking into best-possible detection limits for GW samples, and that we would talk more about how to assess GW impact on surface water. If you would give me some idea of a time frame for the conference call so that you can get us materials with some lead time for review, I'll go ahead and set up the call.

Anyway, here is EPA's feedback:

1. Re. Hg DNAPL: We are still following up. We have some concern that elemental Hg could be mobile in sand or coarser substrates, or where soil disturbance provides a conduit for Hg movement, but we have not found any hard evidence that elemental Hg has actually behaved as a DNAPL in the real world. Still need to check a few references. Some of our recommendations regarding further GW and soil sampling will help address the potential for DNAPL.

Elemental Hg occurring in sub-surface soils could be evidence of DNAPL-like mobility. During the RI work, we understand that elemental Hg was observed in only one soil sample (a surface soil sample SS-04). But there were investigations done in the warehouse area prior to the RI. Has a review of surface and sub-surface soil samples from these investigations been done to characterize where and at what depths elemental Hg has been observed? If not, we recommend that this be done and a summary prepared.

2. Re. GW low-flow sampling: As we discussed at the meeting, all existing wells will be sampled for groundwater quality using low-flow sampling methods. The position of the pump will be adjusted in wells that have long screen lengths (greater than 10 ft) to get an upper and lower sample to see if higher concentrations, possibly associated with a DNAPL, could be related to depth in the aquifer. Samples from wells with screens lengths of 10 feet or less should be collected from their midpoint or below it. Pump settings should be recorded for each well and included in the sample results.

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I recall Ken Walanski saying that MW-13 no longer exists or is inaccessible. I hope I'm wrong. This well is quite important in that it is the only well north of the Wolf Warehouse, had high Hg GW concentrations, and was only a short way down gradient of the highest soil Hg concentrations. If it no longer exists or isn't accessible, it should be replaced. If this can't be done now, it should be done during design. In general, any future wells in the warehouse area should be drilled until a fine-grained low-permeability unit (the varved clay unit or the undifferentiated fine-grained deposits) is encountered.

3. Re. sub-surface soils: Because of the high mercury levels found in soils at MW-13, MW-10 at depth, and in surface soil samples along the property line north of the warehouses, there is a concern of possible contamination and movement to the north. As we discussed, additional soil samples will be collected from borings to the north of the warehouses. The borings should be drilled until the varved clay unit or the undifferentiated fine-grained deposits are encountered, or to refusal.

4. Off-site work during design phase: As we discussed, additional sub-surface soil delineation is needed off-site, and should be done during the design phase. Installation of a new well on the north side of Ethel Blvd. should also be considered. This could help to determine if any contamination has migrated to the north or it could serve as a background well on the north side of the site and help to rule out contamination to that area. If the well is installed it should be sampled, leveled (surveyed), and included in ground-water-level measurements.

5. Review of revised cross-sections (Dec. 14, 2001):

Sections CC and EE indicate that the varved clay unit is present in the northwest part of the site and it dips steeply to the southeast. The varved clay unit is not encountered at any borings east of UD-1A (described in the old Ward reports, 1974, 1975). Generally, the unit referred to as the undifferentiated fine-grained deposits dips to the west and northwest, but on the east side of the site, the unit apparently dips to the south and east.

Section GG which trends between sections CC and EE indicates that the undifferentiated fine-grained deposits are present in this area. Borings along section GG did not encounter either unit, but it is likely that the varved clay is present beneath section GG rather than the undifferentiated fine-grained deposits that are shown.

Especially in the northwest part of the site, the deepest part of the fine- to coarse-sand deposits forms an apparent linear feature near MW-9, west of MW-13, MW-8, and at old borings B-1A and UD-1A. Also, the varved clay unit typically is encountered to the west of this lineation and the undifferentiated fine-grained deposits are found to the east. The trace of this lineation trends beneath the Wolf Warehouse. If a DNAPL exists, it could accumulate here or follow this path in the subsurface.

6. Assessing GW impact on surface waters: The basic exercise is to determine the

equivalent of a water-quality based limit for contaminant discharge from site groundwater to adjacent surface waters. NJDEP's water permits folks would be the appropriate people to do this. We can talk a bit more about the generic methods, if you want. For Hg, it seems quite likely that concentrations in the sediments and water of the Creek are high enough so that there would not be any further assimilative capacity. Thus the "limit" would be the water quality standard. I really don't know what the case would be for other site COCs.

Given the above, perhaps it would be worth doing another round of surface water sampling as the GW work is being done (and using best possible detection limits).